Draft Earth Venture-2 Announcement of Opportunity and Science Evaluation

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Introduction

Purpose of this Presentation

1. Present to the community the Draft Earth Venture-2 (EV-2) Announcement of Opportunity (AO), and highlight the evaluation process.

2. To collect comments and answer questions.

Important Note: This AO is based on SMD's Standard PI-Led Mission AO. However, it incorporates a large number of changes relative to the standard template as well as previous ESSP Program AOs including both policy changes and changes to proposal submission requirements. All proposers must read this AO carefully, and all proposals must comply with the requirements, constraints, and guidelines contained within this AO.

Venture Class – ESD Objectives

- **A sustained, successful Venture-class element is a priority from the Decadal Survey**
  - Advances science/applications and promotes community involvement through frequent, regular proposal opportunities
  - Ensures overall program scientific flexibility and responsiveness through constrained development schedules

- **ESD Venture-class characteristics**
  - Science-driven, involving sustained (> seasonal) data acquisition
    - Technology development/demonstration are not sufficient justifications
  - Frequent, regular solicitations
    - Bi-annual frequency for EV-odd & EV-even
    - Annual frequency for solicitations for EV-I instruments
  - Competitively selected, PI-led
  - Cost and schedule constrained
    - Explicit total cost caps per investigation defined in each solicitation
    - 5-year total investigation term (data acquisition and analyses) for suborbital investigations
    - 5-year development time-to-launch for space missions – all science requirements must be achieved within nominal (typically 1-3 year) mission

Earth Science Focus Areas

The 2010 Science Plan for NASA's Science Mission Directorate is available through the EV-2 Library (Appendix D) and can also be found at http://science.nasa.gov/about-us/science-strategy/

The NASA Earth science research program strives to advance goals in the following six Science Focus Areas and their component inter-disciplinary programs:

- **Atmospheric Composition**
- **Weather**
- **Carbon Cycle & Ecosystems**
- **Water & Energy Cycle**
- **Climate Variability & Change**
- **Earth Surface & Interior**

The six focus areas and their main aims are articulated in the *2010 Science Plan*.

EV-2 Mission Scope & Parameters

- **Science Scope**
  - EV-2 AO will be an open science call to address any of the Earth Science Focus Areas
  - Venture class is not intended to be a mechanism for accelerating the implementation of Decadal Survey missions; however,
  - Missions whose objectives overlap with those of planned Decadal Survey missions may be proposed, assuming they meet other criteria in terms of innovation, cost, schedule, and science.
- **Evaluation Criteria**
  - Science and mission feasibility are both critical
- **Partnerships**
  - Enabling partnerships are encouraged, but the stability & reliability of the partnership will be considered as a risk element in the proposal
  - Complete spaceflight missions shall be proposed that include instruments, spacecraft, launch services, mission operations, and data analysis
  - Flying an instrument package on the ISS, on a partner-provided spacecraft, or on a US-manufactured commercial carrier (i.e. a “hosted payload”) are all acceptable
    - EV-2 investigation must be able to achieve its science objectives independent of other co-manifested investigations
    - Partnership must be established in the proposal (i.e., Letter of Commitment)

Draft EV-2 AO Overview

- **Single-Step Evaluation & Selection Process**

- **PI-managed NASA Life Cycle Cost Cap**
  - The PI-Managed Mission Cost cap is $150M in Fiscal Year (FY) 2014 dollars (including launch services, operations, data analysis, reserves)
- **Life Cycle Schedule**
  - Development not to exceed 5 years from selection to launch readiness
- **Access to Space**
  - NASA-provided launch
  - Non NASA-provided launch as primary, secondary, or co-manifested payload on US or non-US carrier (restrictions apply for non-US carriers)
  - Hosted payload on US or non-US developed carrier (restrictions apply for non-US carriers)
  - SOMD-provided ride and accommodations for an ISS hosted payload
- **Standard NASA Earth Science Data Policy**
- **Standard SMD Education/Public Outreach Plan** (1%)
  - Plan not required in proposal, but costs must be identified

Draft EV-2 AO Overview (continued)

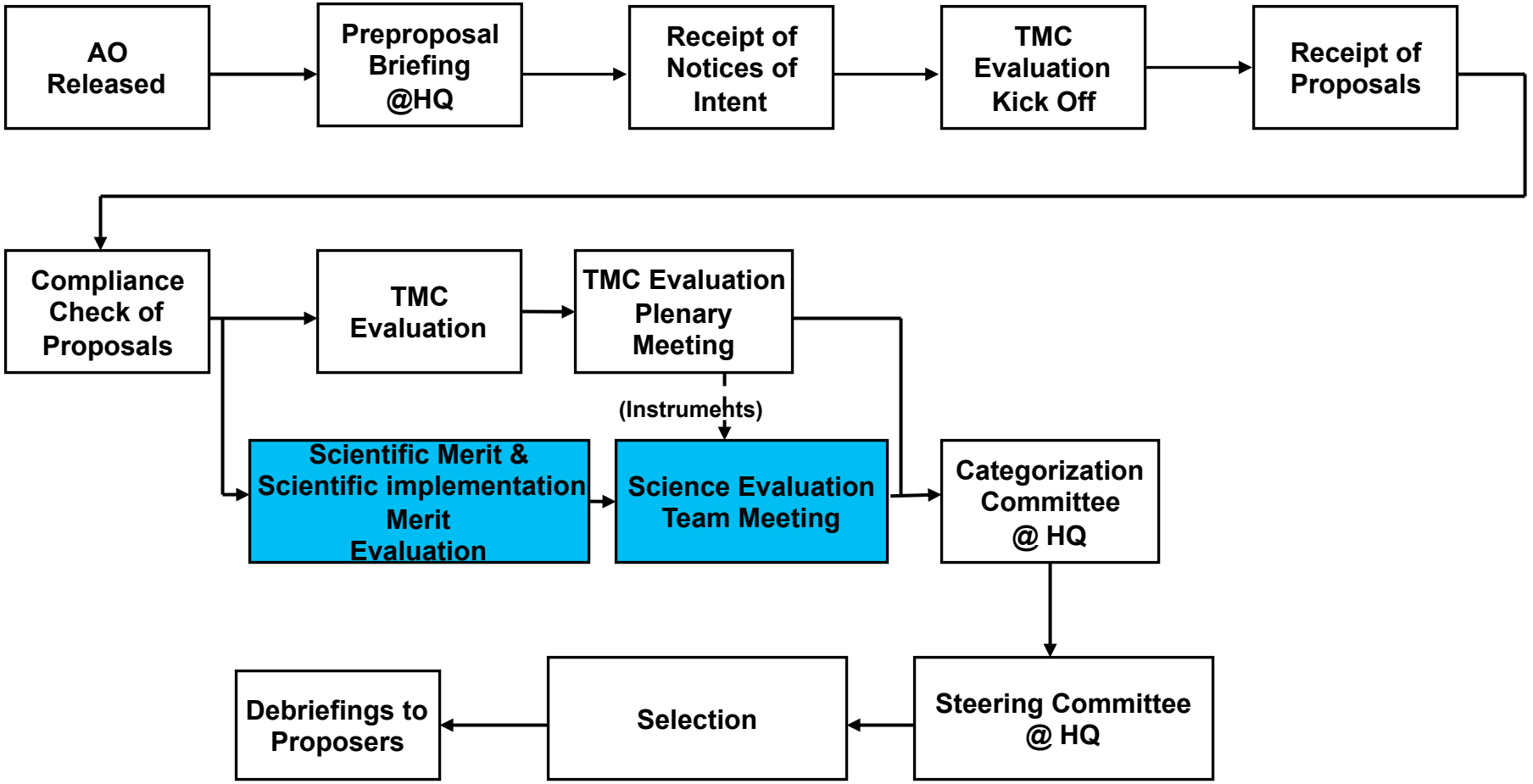
- **No limit on non-NASA or non-US contributions**
  - Contribution of launch services permitted
  - Contribution as a co-manifested or secondary payload on a US or non-US launch vehicle permitted
    - Restrictions apply for use of a non-US launch vehicle (i.e., must be part of a legitimate science collaboration on a no-exchange-of-funds basis)
  - Contribution as a "Hosted Payload" for a complete investigation on a partner spacecraft or commercial spacecraft permitted
    - EV-2 investigation must be independent of other co-manifested investigations for mission success and the partnership must be established in the proposal
  - Enabling partnerships are encouraged, but the stability & reliability of the partnership will be considered as a risk element in the proposal
- **Risk Classification**
  - Mission Category 3 (<$250M, low priority)
  - Payload Class D allowable
- **Applied Science**
  - Proposers to be asked to identify potential applications after selection
  - Not a selection criteria for EV-2

Tentative EV-2 AO Schedule

- **Release Draft AO for comments** - 2/15/11
- **Draft AO Workshop** - 3/4/11
- **Comment due date** - 3/11/11
- **Release of AO** – Late Spring 2011
- **Preproposal Conference** – Release of AO + 2 weeks
- **Proposal Submittal** – Release of AO + 90 days
- **Selection** – Submittal + 6 months
- **Launch Readiness** – no later than 5 years after selection

Evaluation Overview

Proposal Evaluation Process



Compliance

•All proposals will be initially screened to determine their compliance to requirements and constraints of this AO.

•Proposals that do not comply may be declared noncompliant and returned to the proposer without further review. A submission compliance checklist is provided in Appendix F.

Draft EV-2 AO Highlights

Proposal Evaluation, Selection, and Implementation (Section 7)

7.1 Overview of the Proposal Evaluation and Selection Process

7.2 Evaluation Criteria

- 7.2.1 Overview of Evaluation Criteria
- 7.2.2 Scientific Merit of the Investigation (4)
- 7.2.3 Scientific Implementation Merit and Feasibility of the Investigation (5)
- 7.2.4 TMC Feasibility of the Mission Implementation, Including Cost Risk (5)

7.2.2 Scientific Merit of the Investigation

- Factor A-1. Compelling nature and scientific priority of the proposed investigation's science goals and objectives.
- Factor A-2. Programmatic value of the proposed investigation.
- Factor A-3. Likelihood of scientific success.
- Factor A-4. Scientific value of the Threshold Science Mission.

7.2.3 Scientific Implementation Merit and Feasibility of the Investigation

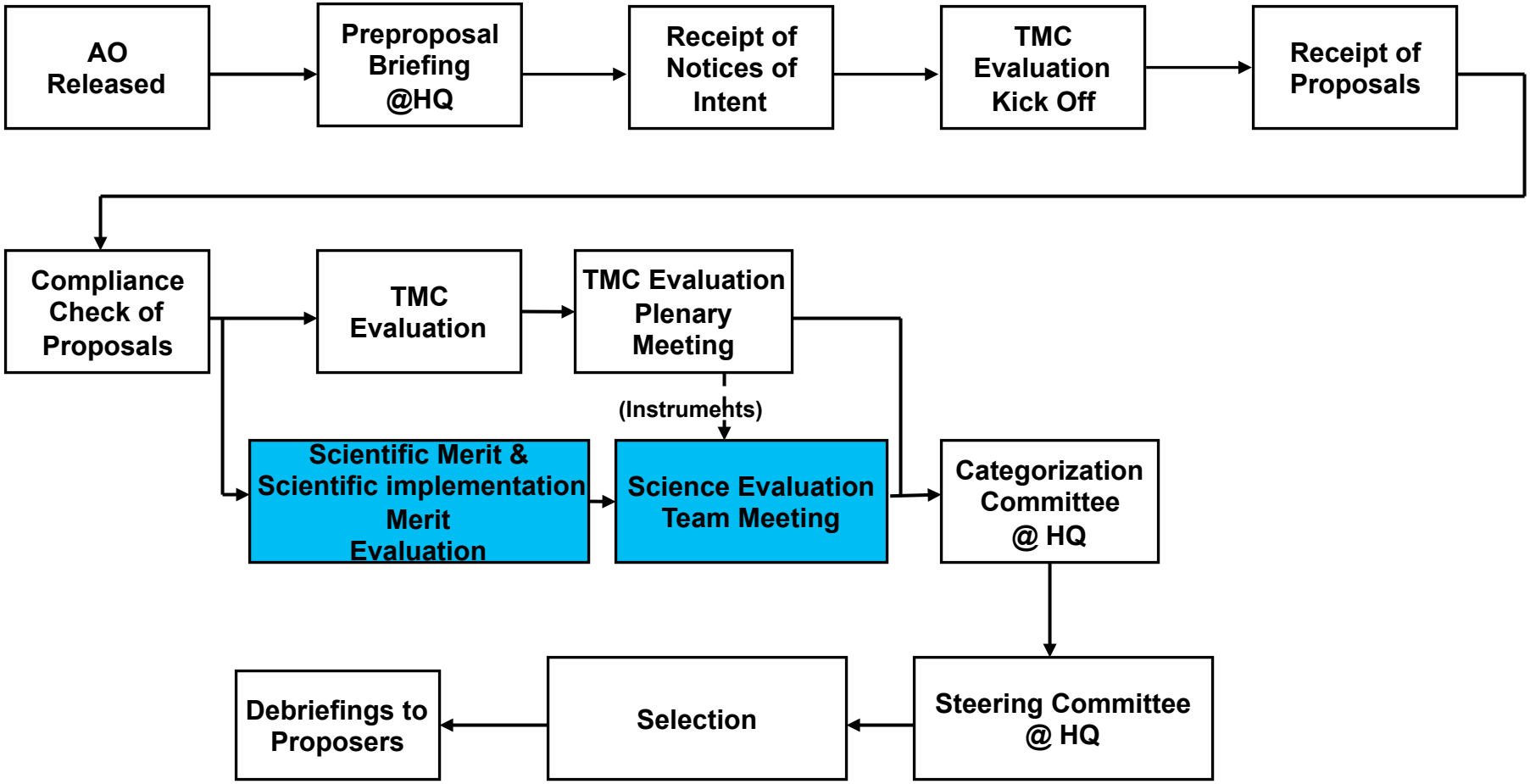
- Factor B-1. Merit of the instruments and mission design for addressing the science goals and objectives.
- Factor B-2. Probability of technical success.
- Factor B-3. Merit of the data analysis, data availability, and data archiving plan.
- Factor B-4. Science resiliency. This factor includes both developmental and operational resiliency.
- Factor B-5. Probability of science team success.

The adjectival summary scores

Summary Evaluation	Basis for Summary Evaluation
Excellent	A comprehensive, thorough, and compelling proposal of exceptional merit that fully responds to the objectives of the AO as documented by numerous and/or significant strengths and having no major weaknesses.
Very Good	A fully competent proposal of very high merit that fully responds to the objectives of the AO, whose strengths fully outbalance any weaknesses.
Good	A competent proposal that represents a credible response to the AO, having neither significant strengths nor weakness and/or whose strengths and weaknesses essentially balance.
Fair	A proposal that provides a nominal response to the AO, but whose weaknesses outweigh any perceived strengths.
Poor	A seriously flawed proposal having one or more major weaknesses (*e.g.,* an inadequate or flawed plan of research or lack of focus on the objectives of the AO).

Evaluation Overview

Proposal Evaluation Process



Categorization

- Category I. Well conceived and scientifically and technically sound investigations pertinent to the goals of the program and the AO's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and data that can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.
- Category II. Well-conceived and scientifically or technically sound investigations which are recommended for acceptance, but at a lower priority than Category I.
- Category III. Scientifically or technically sound investigations which require further development. Category III investigations may be funded for development and may be reconsidered at a later time for the same or other opportunities.
- Category IV. Proposed investigations which are recommended for rejection for the particular opportunity under consideration, whatever the reason.

Questions

All questions pertaining to the draft EV-2 AO

MUST

be addressed to:

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